

CLAIMS

1. A touch screen mounting assembly for a liquid crystal display (LCD) panel comprising:

a bottom frame having a substantially rectangular-shaped cavity therein for mounting a backlight panel thereto, said bottom frame being equipped with a plurality of attachment means each having a compressible spring and is situated on an outer periphery of the frame;

a backlight panel for supplying illumination to said LCD panel and for mounting to said bottom frame, said backlight panel having a front surface opposite to a back surface that faces said bottom frame, said front surface having a plurality of pressure-sensitive transducers mounted thereto;

a liquid crystal display panel positioned juxtaposed to said front surface of said backlight panel sandwiching said plurality of pressure-sensitive transducers therein between; and

a top frame for compressing said compressible springs in said plurality of attachment means against said bottom frame by a plurality of tabs mounted peripherally on said top frame such that said plurality of compressible springs bias said LCD panel toward said bottom frame.

2. A touch screen mounting assembly for a LCD panel according to Claim 1, wherein said bottom frame being equipped with four attachment means situated at four distant corners of said bottom frame.

3. A touch screen mounting assembly for a LCD panel according to Claim 1, wherein said plurality of attachment means each consists of a threaded stud having a shaft portion and two end portions, a coil spring situated on and encircle said threaded stud, two fastening means each engaging one of said two end portions.

4. A touch screen mounting assembly for a LCD panel according to Claim 3, wherein one of said two fastening means being fastened to said bottom frame while the other fastening means being fastened to said top frame.

5. A touch screen mounting assembly for a LCD panel according to Claim 1, wherein said plurality of pressure-sensitive transducers being four transducers, each mounted to a distant corner on said front surface of said backlight panel.

6. A touch screen mounting assembly for a LCD panel according to Claim 1, wherein each of said plurality of pressure-sensitive transducers being in electrical communication with a pressure-sensing circuit through a wiring.

7. A touch screen mounting assembly for a LCD panel according to Claim 1, wherein said plurality of pressure-sensitive transducers being piezoelectric sensors.

8. A touch screen mounting assembly for a LCD panel according to Claim 1, wherein said top frame further comprising a center cavity portion having a protective film extended thereover for protecting a front surface of said LCD panel when said top frame is mounted on said LCD panel.

9. A touch screen mounting assembly for a LCD panel according to Claim 1, wherein said plurality of pressure-sensitive transducers being mounted to said front surface of the backlight panel by adhesive means.

10. A method for fabricating a touch screen mounting assembly for use on a LCD panel comprising the steps of:

providing a bottom frame having a substantially rectangular-shaped cavity therein for mounting a backlight panel thereto, said bottom frame being equipped with a plurality of attachment means each having a compressible spring situated on an outer periphery of the frame;

mounting a backlight panel for illuminating said LCD panel to said bottom frame, said backlight panel having a back surface and a front surface, said back surface intimately engages said bottom frame while said front surface having a plurality of pressure-sensitive transducers mounted at each distant corner of said backlight panel;

positioning a LCD panel juxtaposed to said front surface of said backlight panel sandwiching said plurality of pressure-sensitive transducers therein between;

mounting a top frame to said bottom frame with said backlight panel and said LCD panel sandwiched therein by fastening to said plurality of attachment means; and

biasing said LCD panel toward said bottom frame by said plurality of compressible springs.

11. A method for fabricating a touch screen mounting assembly for use on a LCD panel according to Claim 10 further comprising the step of constructing each of said plurality of attachment means by a threaded stud having a shaft portion and two end portions, a coil spring situated on and encircle said threaded stud, and two fastening means each engaging one of said two end portions.

12. A method for fabricating a touch screen mounting assembly for use on a LCD panel according to Claim 11 further comprising the steps of:

fastening a first of said two fastening means to said bottom frame; and

fastening a second of said two fastening means to said top frame.

13. A method for fabricating a touch screen mounting assembly for use on a LCD panel according to Claim 11 further comprising the step of fastening said two fastening means to fastening tabs provided on an outer periphery of said bottom frame and said top frame, respectively.

14. A method for fabricating a touch screen mounting assembly for use on a LCD panel according to Claim 10 further comprising the step of attaching said plurality of pressure-sensitive transducers to said front surface of said backlight panel at each distant corner by adhesive means.

15. A method for fabricating a touch screen mounting assembly for use on a LCD panel according to Claim 10 further comprising the steps of:

providing a pressure-sensing circuit;

receiving signals from said plurality of pressure-sensitive transducers by said pressure-sensing circuit; and

calculating the pressure at each distant corner of said bottom frame to determine a location on said LCD panel that was touched.

16. A method for fabricating a touch screen mounting assembly for use on a LCD panel according to Claim 10 further comprising the step of providing four pressure-sensitive transducers with one mounted at each distant corner of said backlight panel.

17. A method for fabricating a touch screen mounting assembly for use on a LCD panel according to Claim 10 further comprising the step of providing four piezoelectric sensors with one mounted at each distant corner of said backlight panel.

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